



UNIVERSITI PUTRA MALAYSIA

**THE ROLE OF INTERPRETIVE SIGNAGES IN ENHANCING
CONSERVATION KNOWLEDGE, AWARENESS AND BEHAVIOR
AMONG VISITORS AT THE PENANG NATIONAL PARK, MALAYSIA**

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By

MOHD HAFIZAL BIN ISMAIL

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia,
In Fulfilment of the Requirement for the
Degree of Master of Science**

July 2008



Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirements of the Degree of Master of Science

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July 2008

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Interpretation is an approach of communication used in most national parks and recreation areas to reveal information, create awareness and overcome park problems such as littering and vandalism. An experimental study was conducted to determine the role of developed interpretive signages in conservation knowledge, awareness and behavior among visitors at Penang National Park (PNP). Interpretive signage with three different theme and storyline were designed using Tilden's interpretation principles and were placed along PNP's existing trails as treatment. The questionnaire survey was conducted before and after the visitors entered the park through Pasir Pandak entrance. The questionnaires were divided into three main sections and designed based on human basic psychological theory (belief, attitude and behavioral) to measure visitors perception towards natural environment, emotional effect and human rights. Similar set of questionnaire was used for *before* and *after* survey to observe differences in terms of respondents' agreement. Respondents were divided into two groups, which were treatment and control groups. Treatment group was the target group to observe impact on



effectiveness of interpretive signage towards their conservation awareness and attitude. Control group was the group who did not received any treatment during the study. About 266 pairs of questionnaires were collected from both groups which consisted of 228 pairs of the treatment group and 38 pairs of control groups. Results showed that most of both respondents were between 18 to 28 years old, students in tertiary education with monthly income of less than RM500 per month. Majority of these respondents came to PNP to gather some valuable experience and for enjoyment with friends. Overall, each sections of questionnaire showed significant differences and typically the impact of developed interpretive signage on visitors' conservation awareness was highly influenced by their emotions. Results indicated that the respondents became more aware after they received the treatment. The impact of developed interpretive signages showed that they would take several actions as their new belief/perception towards natural resources such as giving advices to anyone or visitor who dropped litter in PNP's natural area and willing to pick up any litter which they found along the trails. Impact on respondents' knowledge can be observed when they realize that large numbers of visitors in a period of time would impact the resource. Initially, findings from this study proved that the impact on interpretive signages had essentially enhanced conservation awareness among the visitors and can be useful as a linkage for visitors to share their awareness and appreciation towards natural resources.



Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk mendapatkan Ijazah Master Sains

**PERANAN PAPAN TANDA INTERPRETASI DALAM MENAMBAH
PENGETAHUAN, KESEDARAN DAN PERILAKU DI KALANGAN PELAWAT
DI TAMAN NEGARA PULAU PINANG, MALAYSIA**

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Interpretasi adalah satu pendekatan komunikasi yang banyak digunakan oleh taman negara dan kawasan rekreasi untuk memberi maklumat, kesedaran dan mengatasi masalah di kawasan semulajadi seperti vandalisme dan pembuangan sampah. Satu kajian eksperimen telah dijalankan untuk mengenalpasti peranan kandungan papan tanda interpretasi yang dibangunkan dalam menambah pengetahuan konservasi, kesedaran dan perilaku di kalangan pengunjung di TNPP. Tiga papan tanda interpretasi dengan tiga tema dan jalan cerita yang berbeza antara satu sama lain telah dibuat menggunakan prinsip Tilden dan diletakkan di sepanjang rentis yang sedia ada di TNPP sebagai 'rawatan'. Survey menggunakan borang soal selidik dibuat *sebelum* dan *selepas* pengunjung memasuki TNPP melalui Pasir Pandak. Borang soal selidik terbahagi kepada tiga bahagian utama dan direka berdasarkan teori asas psikologi manusia untuk mengukur persepsi pelawat terhadap persekitaran semulajadi, kesan emosi dan peranan manusia terhadap alam sekitar. Responden dalam kajian ini akan dibahagikan kepada dua

kumpulan iaitu kumpulan rawatan dan kumpulan kawalan. Kumpulan rawatan adalah kumpulan sasaran kajian untuk mengenalpasti peranan papan tanda interpretif untuk menambah kesedaran konservasi pelawat di TNPP. Kumpulan kawalan adalah kumpulan yang tidak menerima sebarang rawatan. Sejumlah 266 pasang borang soal selidik berjaya dikumpulkan daripada kedua-dua kumpulan yang diperolehi sebanyak 228 pasang dari kumpulan rawatan dan 38 pasang dari kumpulan kawalan. Hasil keputusan menunjukkan majoriti kedua-dua responden yang terlibat adalah berusia antara 18-28 tahun. Majoriti daripada responden terlibat adalah pelajar dengan pendapatan kurang daripada RM500 sebulan. Majoriti daripada responden yang datang ke TNPP adalah bertujuan untuk mendapat pengalaman dan meluangkan masa cuti bersama rakan-rakan. Secara keseluruhan, keputusan yang diperolehi menunjukkan bahawa terdapat perbezaan yang ketara bagi kumpulan rawatan. Impak daripada papan tanda interpretif ini menunjukkan responden mengalami proses perubahan dari segi sikap dan perilaku selepas menerima rawatan. Di dapati responden bersedia untuk 'bertindak' seperti bersedia untuk menegur pengunjung yang membuang sampah disepanjang rentis TNPP dan sanggup mengutip setiap sampah yang dijumpai di sepanjang rentis TNPP. Kesan terhadap pengetahuan responden juga turut bertambah apabila responden percaya bahawa bilangan pengunjung yang ramai ke TNPP pada satu-satu masa akan memberi impak terhadap sumber di TNPP. Hasil daripada keputusan yang di perolehi membuktikan bahawa kesan daripada kandungan papan tanda interpretasi ini berjaya mempengaruhi kesedaran konservasi pelawat dan ianya sangat berguna kepada pelawat untuk berkongsi kesedaran dan menghargai alam semulajadi bersama pengunjung lain.

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DECLARATION

I hereby declare that the thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at UPM or institutions.

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CHAPTER 1

INTRODUCTION

1.1 General Background

Interpretation is a communication process which reveals the secrets in helping people to understand and appreciate their environment. Nowadays, interpretation has increasingly been recognized as an important tool to enhance public knowledge on resources (natural and cultural), to promote conservation, to carry resource-management message, to cultivate tourism, to encourage social interaction, to function as a public-relations tool, and to provide value-added recreational activities.

The important role of interpretation is to manage the natural sites through the promotion of awareness programmes among the public. The visitors' first experience with the site can effectively be used to communicate history and significant values of natural resources by instilling their awareness, understanding and appreciation towards particular resources. The ultimate goal of interpretation is to further increase the conservation awareness.

One of the global concerns that can increase public awareness through interpretive strategy is environmental conservation. Environmental conservation encompasses the identification, protection and promotion of things that are essential in our natural



environment. The term conservation covers a wide range of tangible things; it can be an object in our developed environment, such as a park, a garden or a heritage trail. It can also be an intangible subject, as in daily social life, language, and also some legends. In fact, the term conservation can be define as a protection from any agent, be it environmental or human that threatens to destroy nature and heritage; it also involves an increment in our understanding and awareness on the importance of preserving our natural and heritage resources (Sharpe, 1976).



1.2 Problem of Statement

Park managers have legislative requirements to manage recreation in ways that mitigate impacts and ensure that activities are ecologically sustainable. As the department, which is responsible to manage Penang National Park (PNP), Department of Wildlife and National Park (DWNP) is also committed to the above requirement in managing the world's tiniest national park in a sustainable manner.

Previously known as Pantai Acheh Forest Reserve, this newly established national park is the first protected area legally gazetted under the National Park Act of 1980. This gazettment proved the State and Federal Governments' seriousness in protecting the environment. Located in north-western part of Penang Island, PNP is covered with 1181 hectares of forest and 1381 hectares wetlands. The park ecosystem is really distinctive as it encompasses a diversity of habitat with hills, sandy and rocky beaches, streams and coastal forests which represent much of Penang's natural habitats.

The ultimate goal of DWNP in managing PNP is to foster love towards nature among its visitors by giving them exposure and awareness on the importance of preserving the environment and nurturing a sense of belonging. The department believes that it is necessary to change the way the public think on conservation of species and ecosystem diversity in PNP. The behavioural adjustment process occurs as visitors begin to

understanding more clearly that human societies are dependent on services and functions provided by the environment, which can be directly observable at PNP.

On the other hand, the public have the ability to directly affect the quality of the natural environment through individual behaviour, which depends on the public conservation awareness towards the environment. Consequently, it is crucial to seek a better understand of how individuals form their conservation awareness about environmental quality and environmental impact through recreation and tourism activities. Therefore, the concept of conservation awareness is very useful to the DWNP in achieving its management goals.

However, since the establishment of PNP, the park management had always facing the problems with the visitors' because of their inappropriate behaviour. The problems that had been faced by the park management were related to human use (Alif, 2004) such as littering, vandalism and makes unpleasant noise at the campsite. The uncontrolled human use in national parks would bring unpleasant activities such as littering, vandalism and shortcutting (DWNP, 2007).

Littering problem occurred in most protected areas (Azlin *et al.*, 2005). With regard to this littering in PNP seems to be a serious problem with no end at this sight. Various preventive measures have been taken by the park management such as providing adequate quantity of bins and placing the warning signs along the existing trails (Adib, 2005). This study had identified that the park management are still facing the continuing

problems because of the lack of serious enforcement by the park management. Without serious actions from the park management, PNP would face an enormous impact on resources and existing facilities by uncontrollable visitors and it would affect the PNP reputation as new developed national park in Malaysia.

Vandalism is also one of the problems at PNP. The management had allocated high maintenance cost for the facilities at PNP every years since established (Alif, 2004). These scenarios are such a wasted because the fund should have been shift into the use of stabilization the programs and activities at PNP. The visual unsightliness could affect the first time visitors from gaining more experiences and enjoyment during visitation.

Shortcutting is prevalent in many parks. Shortcutting occurs when visitors leave the existing trail before the end of switchback, rather than walking all the way along the track. Visitors will usually leave the existing trail system because either there are some dissatisfactions with the trail or they have the unexpected desire to go somewhere else (Cole 1984 & 1990). The effects of shortcutting are erosions, damage of vegetation, disturbances to soil profile and trail degradation (Cole, 1990). However, no action was taken by the management to deal with this problem. The management should focus on this issue because it involves the impact on the resources. Thus, Cole (1884), suggests another approach to overcome the problem using a 'soft' approach by using effective brochures or signs.



Realizing the importance of conserving the natural environment, the PNP management has taken action as part of its effort to reduce and to redistribute the impact of human activities at PNP. As an initial effort to foster awareness among its visitors, PNP management had conducted a series of Biodiversity Conservation Education Programme (BCEP). This programme focuses on planning, conducting and standardizing all awareness programmes to increase the awareness and changes attitude to love and protect the biodiversity resources among students and youth. The target groups of this programme are secondary school students (DWNP, 2007).

Even though the PNP management had successfully ran those programmes, their objective to create public awareness among the visitors did not fully represent the total population of visitors at PNP because the programmes only involve primary and secondary students. In order to create public awareness and reach all the groups of visitors at PNP, another approach considered useful to the PNP management is the use of interpretive signs at the park.

Currently, there is no such interpretive signs being developed at PNP (Alif, 2004). The existing signs only indicate the warning and direction for visitors to move around the park. The interpretive approach which is used for prevention and warning is popular in most of national parks in United State (U.S). The trend was used widely in many U.S national parks because of its cost efficiency and mobility. (Ballantyne, 1998). The interpretive signs were accepted because it is the *intangible* approach for park management to minimize negative impacts especially on resources (Winter *et al.*, 2000).



Therefore, this study is the first attempt to help PNP management in adopting such interpretive approach in designing interpretive signs at the park. The signage design involves the process of allocating suitable location, themes for the park, and constructing storyline using three out of six Tilden's interpretation principles which is relate, reveal and provoke. Before the developed signage is used as the instrument to promote conservation awareness among PNP visitors, there is a need to assess the important roles of interpretive signage in enhancing the knowledge, awareness and behavioural among visitors at PNP.



1.3 Research Objective

The main objective of this study is to assess the role of interpretive signages in conservation knowledge, awareness and behavioural among visitors at Penang National Park.

Specific Objectives:

1. to develop an interpretive storyline by using Tildens' principles.
2. to determine the effects of interpretive signages on visitors knowledge, emotional and behaviour.
3. to determine changes in visitors conservation awareness before and after visiting Penang National Park.

CHAPTER 2

LITERATURE REVIEW

2.1 Definitions of Interpretation

Interpretation has many and varied definitions. One of the first and most influential was that by Freeman Tilden, who defined interpretation as “an educational activity which aims to reveal meanings and relationship through the use of original objects by firsthand experience and by illustrative media rather than simply to communicate factual information” (Tilden, 1977). Since Tilden first published his definition in 1957, there have been many people and organizations who have given their own definition of interpretation. These definitions indicate that interpretation is a means of communicating with visitors to reveal the relationships within the environment and its relevance to visitors rather than just imparting the scientific facts.

Words of interpretation have several meaning in recreation. Each definition is depending on the location and phase of activities. Ham (1992) indicates that environmental interpretation involves translating the technical language of a natural science or related field into terms and ideas that people who aren't scientist can readily understand. And it involves doing it in a way that's entertaining and interesting to these people.

